

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
16 June 2005 (16.06.2005)

PCT

(10) International Publication Number  
**WO 2005/054879 A1**

(51) International Patent Classification<sup>7</sup>:

**G01R 27/02**

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:

PCT/KR2004/003177

(22) International Filing Date: 4 December 2004 (04.12.2004)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:

20-2003-0037800

4 December 2003 (04.12.2003) KR

10-2004-0099962

1 December 2004 (01.12.2004) KR

(71) Applicant (for all designated States except US): **POWERTRON ENG'G CO., LTD [KR/KR]**; 2nd floor, Young-Building #639, ilwon-1dong, kangnam-gu, SEOUL 135-230 (KR).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **KIM, Deuk-soo [KR/KR]**; 51-803, Hanyang Apt #513, Apgujung-dong, Kangnam-ku, SEOUL 135-110 (KR).

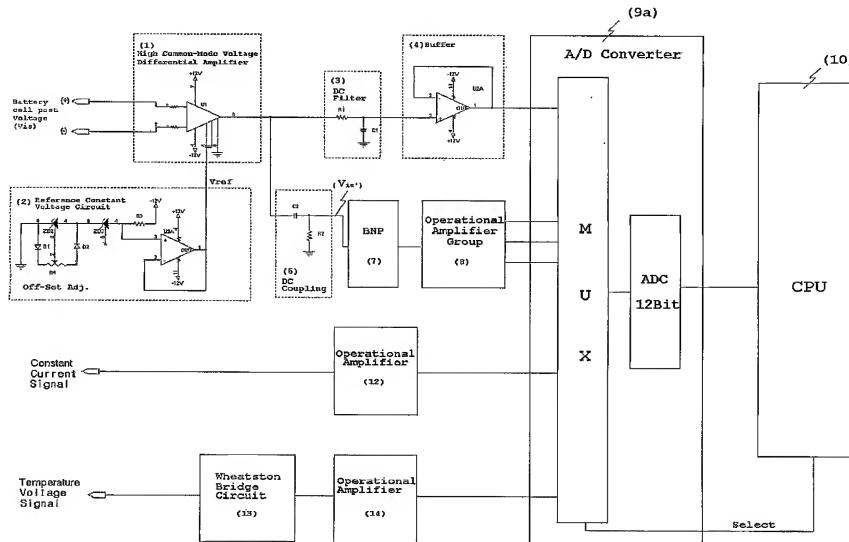
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: BATTERY CELL VOLTAGE AND IMPEDANCE MEASURING CIRCUIT



(57) Abstract: In general, in the circuit to measure and diagnose the cell post voltage and internal impedance in storage battery cells and find out their aging status, the impedance voltage signal which is induced by the constant current is added to the direct current voltage on the storage battery cell post. This invention provides a much better method to discriminate the battery cell voltage 1.OV - 12V and internal impedance voltage from the various noises on the battery cell post voltage like the induced ripple voltage, and then convert them to digital values by means of a A/D converter, and input the digital signals into a CPU. As a result, it raises the degree of accuracy in measurement of the internal impedance value of the battery.

WO 2005/054879 A1